

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

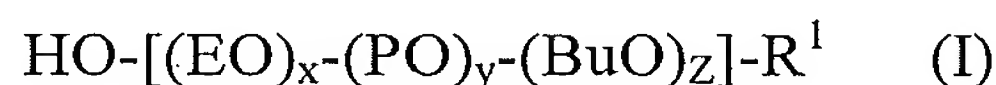
1. (Currently Amended) A process for preparing a polymer P having amide and ester groups, ~~characterized in that~~ wherein,

in a first step, a homo- or copolymer P1 of (meth)acrylic acid is reacted with a monohydroxylic compound E at a temperature of up to 200°C so as to form anhydride groups in addition to ester groups,

and, in a second step, the anhydride groups formed in the first step are reacted with a monoamine compound A at temperatures ~~significantly~~ below 100°C to give the amide.

2. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the first step is effected in the presence of an acid.

3. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the monohydroxylic compound E is a C6- to C20-alkyl alcohol or has the formula (I)



where x, y and z each independently have the values of 0-250 and $x + y + z = 3-250$;

EO = ethyleneoxy, PO = propyleneoxy, BuO = butyleneoxy or isobutyleneoxy, with a sequence of the EO, PO, BuO units in any possible sequence;

and R^1 = alkyl group having 1-20 carbon atoms or alkylaryl group having 7-20 carbon atoms.

4. (Currently Amended) The process as claimed in claim 3, ~~characterized in that~~ wherein $z = 0$ and R^1 = methyl, ethyl, i-propyl or n-butyl group.

5. (Currently Amended) The process as claimed in claim 3, ~~characterized in that~~ wherein the monohydroxylic compound E is a polyalkylene glycol which is capped at one end and has a molecular weight M_w of from 300 to 10 000 g/mol.

6. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the homo- or copolymer P1 of (meth)acrylic acid is prepared by homopolymerization of (meth)acrylic acid or by copolymerization of (meth)acrylic acid with at least one further monomer selected from the group consisting of α,β -unsaturated carboxylic acids, α,β -unsaturated carboxylic esters, α,β -unsaturated carboxylates, styrene, ethylene, propylene, vinyl acetate and mixtures thereof.

7. (Currently Amended) The process as claimed in claim 6, ~~characterized in that~~ wherein the further monomer is selected from the group consisting of methacrylic acid, acrylic acid, crotonic acid, itaconic acid, maleic acid, fumaric acid, and the salts, esters and mixtures thereof.

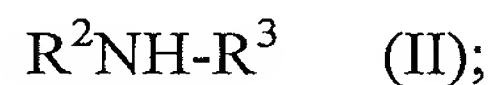
8. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the copolymer P1 is a copolymer of acrylic acid and methacrylic acid and salts

or partial salts thereof; or the homopolymer P1 is a polymethacrylic acid or polyacrylic acid, the salts or partial salts thereof.

9. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the homo- or copolymer P1 of (meth)acrylic acid is prepared by a radical polymerization in the presence of at least one molecular weight regulator.

10. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the homo- or copolymer P1 is a homo- or copolymer which is formed from 10 to 250 monomer units.

11. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~ wherein the monoamine compound A is an amine of the formula (II):



where

R^2 and R^3 together form a ring which optionally comprises oxygen, sulfur or further nitrogen atoms;

or where R^2 and R^3 are each independently an alkyl group having from 1 to 12 carbon atoms, a cycloalkyl group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a hydroxyalkyl group, a compound of the formula (III), (IV) or (V), or H:



where R^4 is an alkylene group and R^5 is a C_1 - to C_4 -alkyl group, and X is an S, O or N, and $v = 1$ when $X = S$ or O , or $v = 2$ when $X = N$; and R^6 is an alkylene group optionally having heteroatoms;

x, y, z each independently have the values of 0-250 and $x + y + z = 3-250$;

EO = ethyleneoxy, PO = propyleneoxy, BuO = butyleneoxy or isobutyleneoxy, with a sequence of the EO, PO, BuO units in any possible sequence;

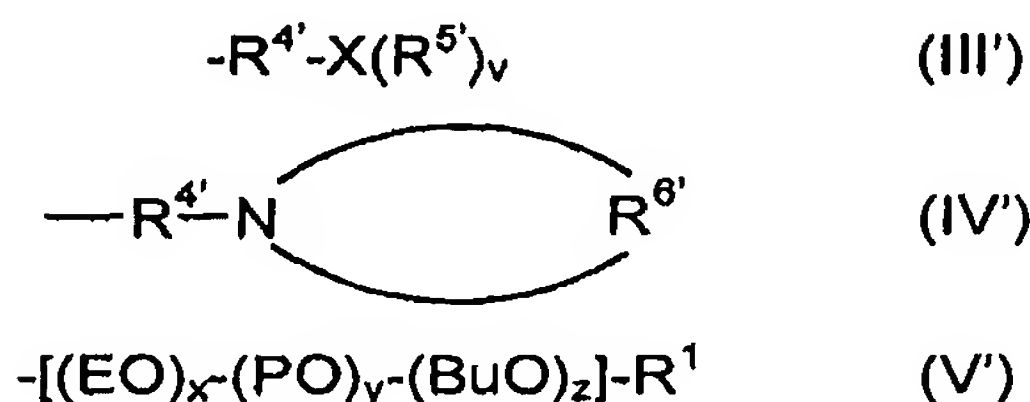
and R^1 = alkyl group having 1-20 carbon atoms or alkylaryl group having 7-20 carbon atoms.

12. (Currently Amended) The process as claimed in claim 11, ~~characterized in that~~ wherein compound A is selected from the group consisting of ammonia, morpholine, 2-morpholin-4-ylethylamine, 2-morpholin-4-ylpropylamine, N,N-dimethylaminopropylamine, ethanolamine, diethanolamine, 2-(2-aminoethoxy)ethanol, dicyclohexylamine, benzylamine, 2-phenylethylamine and mixtures thereof.

13. (Currently Amended) The process as claimed in one claim 1, ~~characterized in that~~ wherein a monoamine compound A' is used in the first step in addition to the monohydroxylic compound E.

$$R^{2'}NH-R^{3'} \quad (II')$$

or where R^{2'} and R^{3'} are each independently an alkyl group having from 8 to 20 carbon atoms, a cycloalkyl group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a compound of the formula (III'), (IV') or (V') or H:



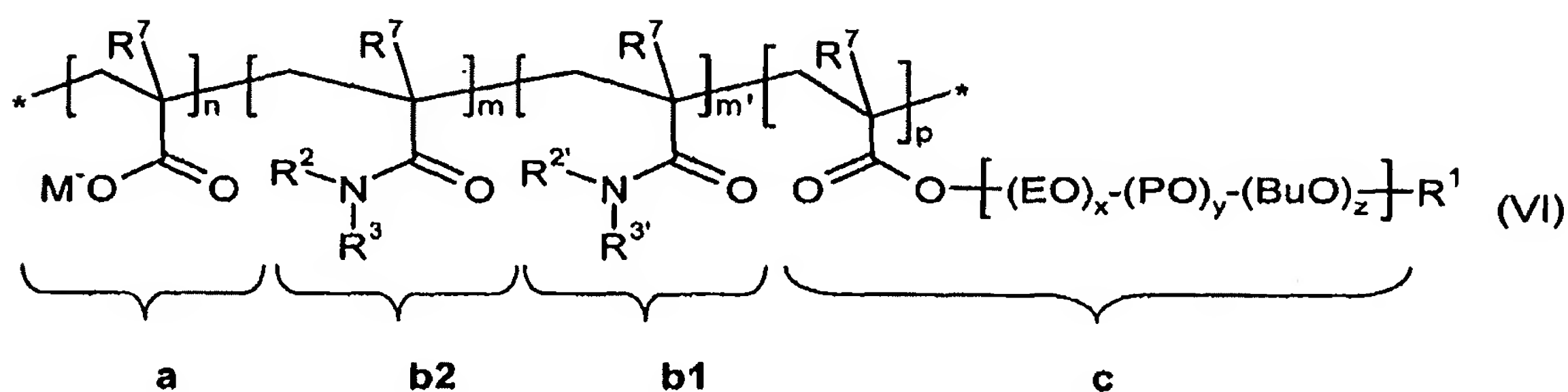
and R¹ = alkyl group having 1-20 carbon atoms or alkylaryl group having 7-20 carbon atoms.

15. (Currently Amended) The process as claimed in claim 14, ~~characterized in~~ that wherein in the monoamine compound A' of the formula (II'), the substituent R^{2'} is of the formula (V') and R^{3'} is H.

16. (Currently Amended) The process as claimed in claim 1, ~~characterized in~~ that wherein the second step is effected in a solvent.

17. (Currently Amended) The process as claimed in claim 1, ~~characterized in~~ ~~in that~~ wherein the temperature of the first step is between 140°C and 200°C, and the temperature of the second step is between 10°C and 60°C.

18. (Currently Amended) The process as claimed in claim 1, ~~characterized in~~ that wherein the polymer P having amide and ester groups has the formula (VI):



where M = cation;

R⁷ are each independently an H or methyl, ~~especially methyl~~;

and

R² and R³ together form a ring which optionally comprises oxygen, sulfur or further nitrogen atoms;

R² and R³ are each independently an alkyl group having from 1 to 12 carbon atoms, a cycloalkyl group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a hydroxyalkyl group, a compound of the formula (III), (IV) or (V), or H:



R^{2'} and R^{3'} are each independently an alkyl group having from 8 to 20 carbon atoms, a cycloalkyl group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a compound of the formula (III'), (IV') or (V'), or H:



R⁵ and R^{5'} are each a C₁- to C₄-alkyl group,

R^6 and $R^{6'}$ are each an alkylene group optionally having heteroatoms,

X is an S, O or N,

$v = 1$ when $X = S$ or O , or $v = 2$ when $X = N$,

x, y, z each independently have the values of 0-250 and $x + y + z = 3-250$;

EO = ethyleneoxy, PO = propyleneoxy, BuO = butyleneoxy or isobutyleneoxy, with a sequence of the EO, PO, BuO units in any possible sequence; and

R^1 = alkyl group having 1-20 carbon atoms or alkylaryl group having 7-20 carbon atoms.

19. - 24. (Cancelled).

25. (Currently Amended) ~~A-The~~ process according to claim 2, wherein the first step is effected in the presence of an acid selected from the group consisting of sulfuric acid, p-toluenesulfonic acid, benzenesulfonic acid, methanesulfonic acid, phosphoric acid or phosphorous acid. ~~preferably sulfuric acid.~~

26. (Currently Amended) ~~A-The~~ process according to claim 25, wherein the first step is effected in the presence of sulfuric acid.

27. (Currently Amended) ~~A-The~~ process according to claim 5, wherein the monohydroxylic compound E is a polyalkylene glycol which is capped at one end and has a molecular weight Mw of from 500 to 5000 g/mol.

28. (Currently Amended) ~~A-The~~ process according to claim 27, wherein the monohydroxylic compound E is a polyalkylene glycol which is capped at one end and has a molecular weight M_w of from 800 to 3000 g/mol.

29. (Currently Amended) ~~A-The~~ process according to claim 8, wherein the homopolymer P1 is a polymethacrylic acid, the salts or partial salts thereof.

30. (Currently Amended) ~~A-The~~ process according to claim 9, wherein the homo- or copolymer P1 of (meth)acrylic acid is prepared by a radical polymerization in the presence of ~~especially of~~ a sulfur compound or of a phosphorus compound.

31. (Currently Amended) ~~A-The~~ process according to claim 10, wherein the homo- or copolymer P1 is a homo- or copolymer which is formed from 20 to 100 monomer units.

32. (Currently Amended) ~~A-The~~ process according to claim 31, wherein the homo- or copolymer P1 is a homo- or copolymer which is formed from 25 to 80[[,]] monomer units.

33. (Currently Amended) ~~A-The~~ process according to claim 11, wherein R^2 and R^3 together form a ring which comprises oxygen, sulfur or further nitrogen atoms.

34. (Currently Amended) ~~A-The~~ process according to claim 11, wherein R^2 and R^3 are each independently an alkyl group having from 1 to 12 carbon atoms, a cycloalkyl

group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a $-\text{CH}_2\text{CH}_2\text{-OH}$ or $-\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$ group, a compound of the formula (III), (IV) or (V), or H.

35. (Currently Amended) ~~A~~ The process according to claim 14, wherein $\text{R}^{2'}$ and $\text{R}^{3'}$ together form a ring which optionally comprises oxygen, sulfur or further nitrogen atoms.

36. (Currently Amended) ~~A~~ The process according to claim 15, wherein the compound A' is an α -methoxy- ω -amino-oxyethylene-oxypropylene copolymer or an α -methoxy- ω -amino-polyoxyethylene.

37. (Currently Amended) ~~A~~ The process according to claim 36, wherein the compound A' is an α -methoxy- ω -amino-polyoxyethylene.

38. (Currently Amended) ~~A~~ The process according to claim 16, wherein the second step is effected in a solvent selected from the group consisting of hexane, toluene, xylene, methylcyclohexane, cyclohexane, ~~or~~ dioxane, ~~or~~ alcohols ~~or~~ and water, preferably water.

39. (Currently Amended) ~~A~~ The process according to claim 38, wherein the second step is effected in water.

40. (Currently Amended) ~~A-The~~ process according to claim 17, wherein the temperature of the second step is between 15°C and 40°C.

41. (Currently Amended) ~~A-The~~ process according to claim 18, wherein M is H^+ , Na^+ , $Ca^{++}/2$, $Mg^{++}/2$, NH_4^+ or an organic ammonium.

42. (Currently Amended) ~~A-The~~ process according to claim 18, wherein R^2 and R^3 together form a ring which comprises oxygen, sulfur or further nitrogen atoms.

43. (Currently Amended) ~~A-The~~ process according to claim 18, wherein R^2 and R^3 are each independently an alkyl group having from 1 to 12 carbon atoms, a cycloalkyl group having from 5 to 9 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a $-CH_2CH_2-OH$ or $-CH_2CH(OH)CH_3$ group, a compound of the formula (III), (IV) or (V), or H.

44. (Currently Amended) ~~A-The~~ process according to claim 18, wherein $R^{2'}$ and $R^{3'}$ together form a ring which comprises oxygen, sulfur or further nitrogen atoms.

45. (Currently Amended) ~~A-The~~ process according to claim 18, wherein $n + m + m' + p = 20-100$.